Whither Latin America? Scoping Export Potentials and Trade Barriers in the Malaysia-Chile Partnership*

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Abstract

This study seeks to compare bilateral export potential estimates in the Malaysia-Chile partnership within the context of the emerging region of Latin America and the Caribbean (LAC) and identify barriers to trade, to provide insights into bilateral market access for exporters. Clearly, the empirical findings suggest overtrading in the major exporting sectors from both sides, since the export basket is also concentrated both ways in the Malaysia-Chile trade. Through the interviews, fewer restrictions are reported by the various stakeholders, as the extent of trade engagement is still somewhat low. Instead, the challenges identified within specific sub-sectors from both sides relate mainly to procedures set to secure compliance. They mostly indicate adherence to labeling requirements for food products. More importantly, this study strongly recommends the direct involvement of the business community of Malaysia in cross-regional initiatives to identify opportunities for creating supply chains in Chile for specific sectors, namely in electronics, furniture and base metals.

Keywords: export potentials, non-tariff barriers, Malaysia, Chile

JEL Classification: F13, F14, O53, O54

1. INTRODUCTION

Since 2003, with the rising number of cross-regional agreements between Asia and Latin America and the Caribbean (LAC)[2], there has been unprecedented rise in cooperation between both regions (Berisha-Krasniqi *et al.*, 2011; Wignaraja *et al.*, 2012). Deepening of trade relations between these regions have important implications for trade flows, given that they exhibit different trade characteristics especially in terms of protection structure, specialization and structure of trade (ADB, 2012). However, to date, China (apart from India, Japan and South Korea) has been the major focus on economic relations between Asia and LAC owing to her large presence in the latter. Little attention has been paid to the engagement between Southeast Asia and LAC. Likewise, the LAC region is not just about large players like Brazil, Mexico and Argentina. In this respect, the Asian Development (ADB) (2012) recognizes the need for other countries in both regions to participate in interregional cooperation.

The emerging region of LAC, for one, has been earmarked as a non-traditional market to be tapped by Malaysia. Though bilateral trade between Malaysia and the LAC is increasing in terms of absolute values, the latter still remains a minor partner of Malaysia, accounting for just 2.2 per cent of total exports in 2011. Likewise, Malaysia accounted for less than one percent of global exports of LAC in the same year (Devadason and Subramaniam, 2014). Nevertheless, potentials for trade complementarity are expected to be derived from this partnership.

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[2] The number of free trade agreements in effect between Asia and LAC as at end of June 2012 is 20 (Wignaraja *et al.*, 2012).

Therefore, this study aims to contribute to the existing literature on interregional engagements of Asia and the LAC[3] (or cross-South Pacific trade) in the following manner. First, it focuses on bilateral trade relations between Malaysia and Chile. Specifically, Chile, the leader in cross-regional Asia-LAC cooperation, is becoming an important player for Malaysia[4] in this region. Chile, for one, is the only free trade agreement (FTA) partner of Malaysia in LAC[5], and is poised to become the gateway in the latter market due to its open economy[6], ease of doing business and reputation for strong financial institutions. Chile is also a member of the Pacific Alliance (PA); a bloc which is seeking to have a common position in trade with Asia. Second, within the Malaysia-Chile partnership, the study goes beyond the bounds of estimating trade potentials to identifying barriers to trade.

Since the Malaysia-Chile FTA (MCFTA)[7] (as in the case of other FTAs) is not a perfect trade policy instrument to increase trade integration between signatories (Wignaraja *et al.,* 2012; ADB, 2012), other residual regulatory impediments (non-tariff barriers and logistic costs) still prevail. In relation to this, there is still lack of adequate information on market access and other barriers in both nations to facilitate decisions on trade opportunities (King *et al.,* 2012). This study fills that vacuum of information pertaining to market access and trade facilitation, mainly restrictions that are less transparent and difficult to quantify. The sectoral approach adopted in this study to address potentials and barriers, together, provide a comprehensive story on bilateral market access for exporters in Malaysia and Chile. The trade potentials in Malaysia-Chile partnership are estimated from an augmented three-dimensional panel gravity model of bilateral trade between Malaysia and 20 LAC countries spanning the period 1990-2012. Fieldwork survey is then conducted with various stakeholders in Malaysia and Chile to identify obstacles for more intensive trade in specific sectors.

The rest of the paper is organized as follows. Section 2 details the trade patterns between Malaysia and Chile. Section 3 details the model specification and the empirical strategy. The results on trade potentials in the Malaysia-Chile partnership are reported and discussed in Section 4. The major barriers to trade based on information obtained through face-to-face meetings with various stakeholders in Malaysia and Chile are summarized and presented in Section 5. Section 6 concludes with some policy recommendations on improving bilateral market access and enhancing trade flows in the Malaysia-Chile context.

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[3] For the purpose of this study, LAC refers to the following 20 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador, Uruguay, Cuba.

[4] Malaysia established diplomatic relations with Chile in 1979. Both nations have indicated similar political interest, particularly related to the Pacific Basin matters, Non Aligned Movement (NAM) and South-South cooperation.

[5] The Malaysia-Chile FTA (MCFTA) that was signed in November 2010, came into force in February 2012. The MCFTA outlines commitments from both parties to liberalize trade; Chile will undertake full elimination of import duties for 6,960 tariff lines (90.2 per cent of total tariff lines) while Malaysia will take full elimination of import duties for products comprising 9,311 tariff lines (89.5 per cent).

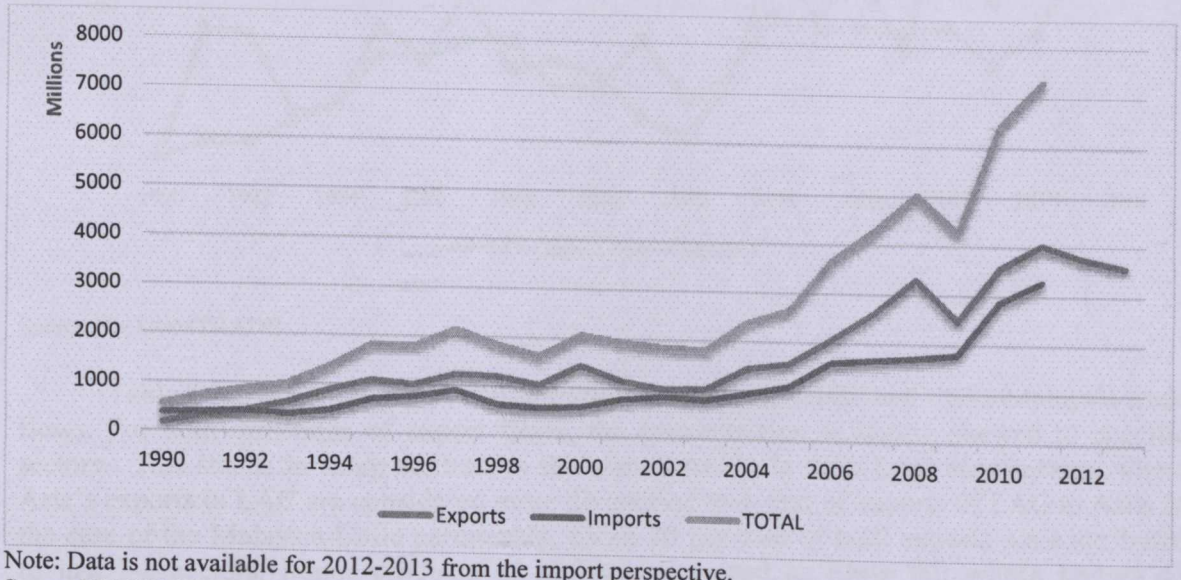
[6] Trade openness of Chile is 59 per cent (Hanouz *et al.,* 2014).

[7] The MCFTA covers trade in goods (tariffs, rules of origin, sanitary and phytosanitary measures, customs procedures and technical barriers to trade), legal issues, trade remedies and cooperation.

2. STYLIZED FACTS ON MALAYSIA-CHILE TRADE

Malaysia's total trade with LAC has grown at 16 per cent per annum between 1990-2012. An important characteristic of the relationship is the trade imbalances in favour of Malaysia (see Figure 1). The top trading partners of Malaysia in this new emerging region are Brazil, followed by Mexico and Argentina (see also Mikic and Jakobson, 2010). Taken together, these three economies account for 78 per cent of Malaysia's total trade with the LAC region.

Figure 1: Malaysia: Trade with LAC, 1990-2012 (USD million)

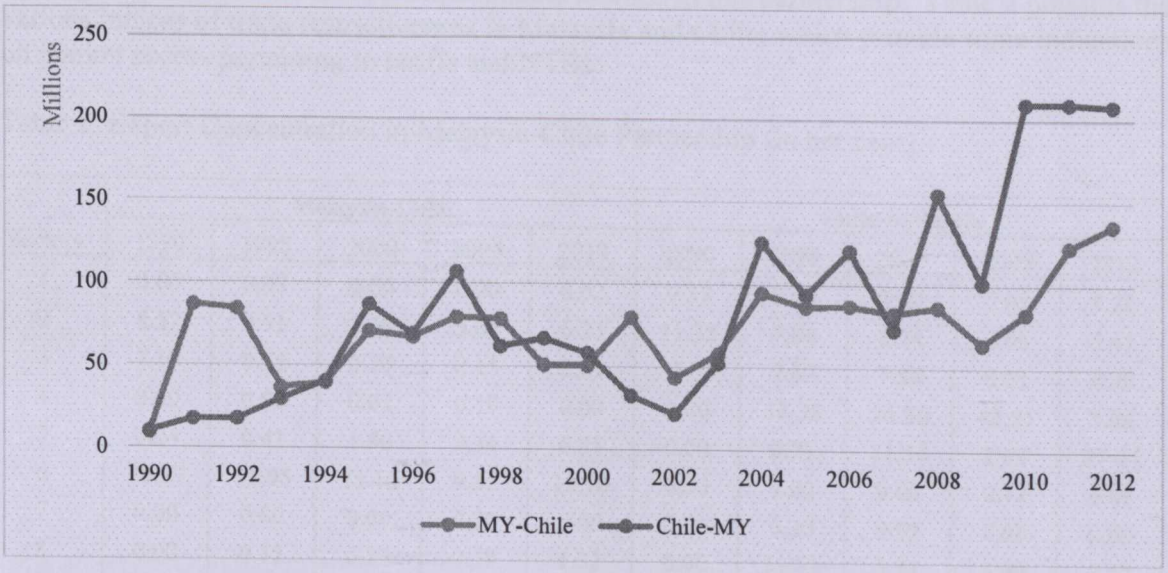


Note: Data is not available for 2012-2013 from the import perspective.
Source UN COMTRADE.

Malaysian exports to LAC comprise mainly that of latex gloves, furniture (office and household), cocoa and cocoa-based products, wood and wood-based products and electrical and electronic products. LAC, in turn, has begun to export new products to Asia, comprising poultry, vegetable oils, fresh fruit, frozen fish, crustaceans and molluscs, fruit and vegetable juices, wine and processed woods (King *et al.,* 2012). It should be noted that trade between Malaysia and LAC is still strongly intersectoral (low intra-industry trade), with LAC exporting mainly primary products to Malaysia, and Malaysia sending manufactures to LAC (ECLAC 2008b). Trade specialization is therefore consistent with the comparative advantages of both parties respectively. It is worth noting here that the commodity for manufacturing pattern is also a hallmark for Asia-LAC trade relationships (ADB, 2012).

Within the LAC, Chile only made up 4 per cent of Malaysia's total exports to the region in 2012. Alternatively, Malaysia commanded 6.2 per cent of Chile's exports as a percentage of total LAC exports to Malaysia in the same year. In the recent past, Chile is exporting more to Malaysia, than *vice versa* (see Figure 2). Chile is also becoming an important import source for the other Association of Southeast Asian Nations (ASEAN) (Mikic and Jakobson, 2010; see also Kuwayama *et al.,* 2000; ECLAC, 2008, 2011; King *et al.,* 2012). The current low levels of economic exchange between Malaysia and Chile signal potentials for expansion. However, the potentials for expansion are undeniably going to differ across tradable sectors.

Figure 2: Export Flows in Malaysia-Chile Partnership (in USD million)



Source UN COMTRADE.

Table 1 provides the export concentration in Malaysia-Chile and Chile-Malaysia trade flows. For both directions of export flows, the concentration is highly skewed to specific sectors. This stands in sharp contrast to the overall trends in Asia-LAC engagement, where Asia's exports to LAC are considered more diversified than that of exports of LAC to Asia. In the case of the Malaysia-Chile partnership, about 70 per cent of total exports were attributed to just 2-3 sectors. Major products of Malaysia exported to Chile fall within sectors 13 (machinery, electrical and electronic products), followed by 15 (namely furniture) and 6 (namely rubber and articles thereof). Wooden furniture (for household and office) from Malaysia is favoured in Chile, owing to its designs, and occupies the top five import source of furniture by Chile. In fact, Chile, despite being the 14th largest export market of Malaysian furniture, is the largest market in Latin America for these products. The made-in-Malaysia furniture is available in leading department stores in Chile, such as Falabella, Ripley, Paris, Multitiendas Corona SA and Muebles Sur. Likewise, rubber gloves from Malaysia, despite being higher priced than the China made gloves, conquers 60 per cent of the market share for these products in Chile (information based on interview with Malaysia External Trade Development Corporation (MATRADE), Santiago). It is obvious that the top products exported from Malaysia to Chile are sustained in the latter market based on non-price competitiveness (design and quality).

Conversely, Chile's exports to Malaysia comprise products of sectors 12 (namely copper and articles thereof) and 5 (namely fertilizers and inorganic chemicals). In 2013, 76 per cent of exports from Chile to Malaysia were from the mining industry (data from ProChile, Santiago), followed by seafood (10 per cent of total Chilean exports to Malaysia), namely salmon and trout. In fact, Chile, considered as a mono-commodity exporter, provided over 48 per cent of Asia's imports of unwrought copper alloys (King *et al.*, 2012).

In relation to trade flows, more importanly, obstacles to trade need to be accounted for, to appraise market access in both nations. Tariffs are certainly not the best explanatory variable to reflect the current state of Malaysia-Chile trade. This is because Chile in particular has a very simple tariff structure consisting of only two distinct tariffs, zero tariff peaks and specific tariffs, and almost no tariff dispersion. Access to the domestic Chilean

market is clearly not an issue (see Table 3)[8]. As such, non tariff barriers (NTBs) need to be accounted for when considering impediments to trade in this partnership. Table 2 presents the various indices of trade restrictiveness in Malaysia and Chile, which provide some indications on market access pertaining to tariffs and NTBs.

Table 1: Export Concentration in Malaysia-Chile Partnership (in per cent)

	Malaysia-Chile					Chile-Malaysia				
Sectors	1990	1995	2000	2005	2012	1990	1995	2000	2005	2012
1	0.00	0.07	0.00	0.00	0.02	0.37	0.04	0.40	2.02	3.28
2	8.52	0.91	2.60	3.04	6.23	11.35	7.08	6.74	3.06	5.47
3	2.19	0.75	0.20	0.15	2.13	33.36	7.67	7.38	6.31	4.90
4	0.00	0.00	0.02	0.19	0.00	0.00	18.35	24.80	42.55	2.86
5	0.04	0.41	1.80	2.34	6.85	0.00	0.73	11.54	2.44	27.04
6	20.77	11.05	13.16	9.85	19.16	0.00	0.00	0.00	0.17	0.05
7	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.02	0.00	0.00
8	0.00	0.15	0.23	0.58	1.32	0.00	11.61	3.81	3.82	2.63
9	1.53	1.15	3.33	1.73	3.58	0.00	0.01	0.00	0.00	0.00
10	0.00	0.23	0.00	0.13	0.38	0.00	0.00	0.00	0.00	0.00
11	0.07	0.27	0.47	0.04	0.33	0.00	0.00	0.00	0.00	0.00
12	0.45	0.18	1.41	28.10	2.07	54.93	54.19	39.03	36.12	53.57
13	63.39	75.40	67.40	43.06	33.88	0.00	0.11	0.01	0.03	0.04
14	0.00	6.86	2.19	0.85	1.79	0.00	0.00	0.00	3.46	0.17
15	3.03	2.57	7.20	9.92	22.24	0.00	0.00	6.26	0.03	0.00

Note: See Appendix Table 2 for the product description of the sections.
Source UN COMTRADE.

Table 2: Trade Restrictiveness Indices* in Malaysia and Chile (in percent)

	OTRI			OTRI_T			MAOTRI			MAOTRI_T		
Country	ALL	AG	MF	ALL	AG	MF	ALL	AG	MF	ALL	AG	MF
Malaysia	27.39	61.06	24.45	3.45	16.21	2.34	7.27	19.94	5.76	2.19	5.99	1.74
Chile	7.15	22.33	5.94	4.67	5.12	4.64	17.24	22.10	15.36	1.05	2.85	0.35

Notes: * Based on applied tariffs. OTRI – overall trade restrictiveness index; OTRI_T – tariff only OTRI; MAOTRI – market access overall trade restrictiveness index; and MAOTRI_T – tariff only MAOTRI. ALL – overall trade; AG – agriculture; and MF – manufacturing.
Source: Kee *et al.* (2009).

There are some interesting observations based on the Overall Trade Restrictiveness Index (OTRI)[9] and the Market Access Overall Trade Restrictiveness Index (MAOTRI)[10]. Malaysia scores higher OTRI values than Chile, while the opposite holds true for MAOTRI.

[8] Chile ranks 9th in terms of domestic market access (level and complexity of tariff protection) while Malaysia is positioned at distant 75th (Hanouz *et al.*, 2014) (see also Table 3).
[9] The OTRI captures the trade policy distortions that each country imposes on its import bundle. It measures the uniform tariff equivalent of the country tariff and NTBs that would generate the same level of import value for the country in a given year.
[10] The MAOTRI captures the trade policy distortions imposed by the trading partners of each country on its export bundle. It measures the uniform tariff equivalent of the partner country tariff and NTBs that would generate the same level of export value for the country in a given year.

In both countries, the values of the restrictiveness indices are much higher when NTBs are accounted for (OTRI and MAOTRI) relative to that for tariffs *per se* only (OTRI_T and MAOTRI_T). Further, the gap in the values of restrictiveness between the countries is also larger when NTBs are considered (OTRI and MAOTRI), then otherwise. Taken together, these observations suggest that NTBs are indeeed contributing to a higher extent in the overall restrictiveness of both markets (see also King *et al.*, 2012).

Aside from measures related to domestic market access (tariffs and NTBs), there are other forms of trade costs that could influence trade potentials through transaction costs. These are trade facilitation factors, that include border administration, logistics and connectivity and the regulatory environment. These elements are captured in the Enabling Trade Index (ETI) (Hanouz *et al.*, 2014) and reported in Table 3 for Malaysia and Chile. Ranked at 25th and 8th in the overall ETI, Malaysia and Chile are considered regional champions within the developing Asia and LAC respectively.

Table 3: Enabling Trade Index (ETI) for Malaysia and Chile, 2014

Categories	Malaysia		Chile	
	score	rank	score	rank
Enabling Trade Index (overall)	4.8	25.0	5.1	8.0
Market access	4.0	40.0	5.5	1.0
Domestic market access	4.8	75.0	5.9	9.0
Foreign market access	3.3	42.0	5.1	2.0
Border administration	4.6	33.0	4.8	26.0
Infrastructure	5.1	23.0	4.4	44.0
Availability & quality of transport infrastructure	5.3	14.0	3.5	64.0
Availability & quality of transport services	5.1	26.0	4.6	43.0
Availability and use of ICTs	5.0	38.0	5.0	36.0
Operating environment	5.0	27.0	5.0	25.0

Notes: Scores range from 1 to 7 with 7 indicating the best possible outcome. The ETI 2014 ranks 138 countries on four categories.
Source: Hanouz *et al.* (2014).

Table 4 further presents the logistics environment for Malaysia and Chile based on 6 key criteria. For all dimensions of the logistics performance index (LPI), Malaysia scores higher than Chile (see also World Bank, 2014), though the latter is a top performer within the LAC in terms of logistics. Malaysia is also ranked much higher than Chile[11] based on this index. Impressively, Malaysia is ranked at 10th position for international shipments. Based on the World Bank, the fees for exporting a container from Malaysia at USD 450 is the lowest in the world (Hanouz, 2014).

Taking into consideration the information on trade restrictiveness in terms of market access (Tables 2 and 3) and trade enablers in terms of logistics performance and operating environment (Tables 3 and 4), it is still remains unclear on which country, Malaysia or Chile, is more capable to facilitate trade, or rather which NTBs are considered critical and stringent. Market access and trade facilitation can be an issue in both nations. This is in fact supported by comparative findings on a broader regional level. For example, LAC is deemed to have more stringent phytosanitary regulations while Asian countries are more stringent in quality measures (ECLAC, 2008; Melo *et al.*, 2013). Taking the food sector as an example, Chile is

[11] However, direct lines between Latin America and Asia-Pacific are known to be available only to and from Chilean ports (ECLAC, 2008).

known to have strict labelling requirements. All packaged foodstuffs imported into Chile must bear labels in Spanish and list all ingredients, including additives, manufacturing and expiration dates of the products, the name of the producer or importer and even the nutritional values.

Table 4: Logistics Performance Index (LPI) in Malaysia and Chile, 2014

	Overall LPI		Customs		Infrastructure		International shipments		Logistics quality and competence		Tracking and tracing		Timeliness	
Country	score	rank	score	rank	Score	rank	score	rank	score	rank	score	rank	score	rank
Malaysia	3.59	25	3.37	27	3.56	26	3.64	10	3.47	32	3.58	23	3.92	31
Chile	3.26	42	3.17	39	3.17	41	3.12	53	3.19	44	3.30	40	3.59	44

Notes: The scorecards demonstrate comparative performance—the dimensions show on a scale (lowest score to highest score) from 1 to 5 relevant to the possible comparison groups—of all countries (world), region and income groups. The LPI 2014 ranks 160 countries on six dimensions of trade that have increasingly been recognized as important to development. The data used in the ranking comes from a survey of logistics professionals who are asked questions about the foreign countries in which they operate.
Source: World Bank (2014), available from: http://lpi.worldbank.org/

In summary, Malaysia's trade with LAC is indeed highly asymmetrical (see also ECLAC, 2011), with trade concentrated within a few destination markets and products. Product demand from the LAC region is also not homogeneous given the strong differences among countries in the LAC. Similarly, there is high export concentration in the Malaysia-Chile partnership, with differing product concentration based on the direction of export flows. These patterns feature inter-industry trade (see also ECLAC, 2008; 2011). It is therefore necessary to consider export potentials: (i) between Asia and LAC in a bilateral context instead of a region-wide basis; in this case the Malaysia-Chile partnership; (ii) for different sectors in both directions of the Malaysia-Chile partnership; and (iii) in terms of market access (NTBs and other trade costs) in both nations.

3. MODEL SPECIFICATION AND DATA DESCRIPTION

3.1 Interpretative Model

This paper employs the extended gravity model, developed by Chengang *et al.* (2010) based on Baltagi *et al.* (2003) and Egger (2002), to derive export potentials in the Malaysia-Chile partnership in the context of LAC. Using a panel data framework, the gravity equations are specified as follows:

Malaysia-LAC:

$$\ln X_{ijt} = \beta_1 \ln GDPT_{ijt} + \beta_2 SIMGDP_{ijt} + \beta_3 \ln GD_{ij} + \beta_4 \ln FDST_{ijt} + \beta_5 SIMFDS_{ijt} + \beta_6 RLFAC_{ijt} + \beta_7 DUMLand_{ij} + \eta_j + \zeta_t + \varepsilon_{ijt} \quad (1)$$

LAC-Malaysia:

$$\ln X_{ijt} = \beta_1 \ln GDPT_{ijt} + \beta_2 SIMGDP_{ijt} + \beta_3 \ln GD_{ij} + \beta_4 \ln FDST_{ijt} + \beta_5 SIMFDS_{ijt} + \beta_6 RLFAC_{ijt} + \beta_7 DUMLand_{ij} + \eta_i + \zeta_t + \varepsilon_{ijt} \quad (2)$$

where X_{ijt} is country i's (reporter) exports to country j (partner) in year t. This study examines bilateral export flows in the Malaysia-LAC context from two perspectives: (i) For one-way bilateral export flows in the Malaysia-LAC case, equation (1), where country i or the reporter country refers to Malaysia; (ii) For one-way bilateral exports flows in the LAC-Malaysia case, equation (2), where country j or the partner country refers to Malaysia. The other variables are as defined below.

GDPT = total GDP of countries i and j
SIMGDP = similarity in the levels of GDP in i and j
GD = geographical distance between i and j
FDST = total inward FDI stock of i and j
SIMFDS = similarity in inward FDI stocks in i and j
RLFAC = relative factor endowments in i and j
DUMLand = dummy variable set equal to 1 if either i or j is a landlocked country, and 0 otherwise

In equations (1) and (2), β represents the coefficient estimates, ζ_t is time effects and ε_{ijt} is a white-noise disturbance term. η_i and η_j refer to the importer and exporter effects for equations (1) and (2) respectively. The above equation follows from a standard gravity model comprising gross domestic product (*GDP)* and geographical distance (*GD*) between countries, augmented with the stocks of inward foreign direct investment (*FDS*) and relative factor endowments (*RLFAC*) on the basis that the latter two variables are closely related to a country's trade capabilities and transaction costs respectively. The following explains the theories that underlie the selection of the explanatory variables in equations (1) and (2), beginning with the core variables of the gravity model.

The level of GDP of both reporter and partner countries are supposed to positively affect their trade. Instead of using the levels of GDP of both countries independently, the total GDP of both partners, *GDPT*, is included in the estimations to jointly capture economies of scale or the size effect. The higher the *GDPT*, the larger the trade flows, given that a greater division of labour and specialization becomes feasible under a larger scale of operation.

However, the level of GDP alone may not be sufficient to explain trade as the similarities of the two trading partners GDPs are of no less importance. From a theoretical perspective, similarity in the level of GDP (*SIMGDP*) or convergence in income levels (or tastes) is likely to increase trade either through the expansions in trade in manufactures or the increase in scope for product diversity.

The next core argument of the gravity model is the *GD* variable. *GD* remains important for considerations of transport costs (Egger, 2000), transaction costs (Bergstrand, 1985; Edmonds *et al.,* 2008) and timeliness in delivery (Rojid, 2006), and is included in the estimations. Thus, the expectations are for $\beta_3 < 0$ (Tinbergen, 1962; Poyhonen, 1963).

Theoretically, foreign direct investment (FDI) contributes to intra-firm trade through global production networks and the increase in product variety in the host economy. This in turn increases the volume of trade, mainly through intra-industry trade (IIT). However, if FDI and trade are substitutes, for example if FDI is mainly channelled into domestic production of the host economy, then, it does not necessarily contribute to expansions in exports. As such, the relationship between *FDS* and international trade remains inconclusive.

The distribution of *FDS* amongst trade partners is also considered important for international trade. If the size of *FDS* is similar between trade partners, one may expect similar volumes and varieties of bilateral exports from the partner countries. Following which, the import capabilities of both partner countries are also likely to be similar, leading to expansions in bilateral trade. Conversely, if the size of *FDS* is uneven between trade partners,

the country with a smaller stock, offers less export capabilities and likewise smaller import capabilities, resulting in lower expansions in bilateral trade. Based on this reasoning, a positive relationship is envisaged between *SIMFDS* and trade.

Differences in factor endowments or factor intensity (capital-labour ratio or K/L) do matter for international trade (Debaere, 2003; Frankel *et al.,* 1995; Ghosh and Yamarik, 2004; Baxter and Kouparitsas, 2006; Cieslik, 2009). Traditional neoclassical trade theories suggest that comparative advantages based on differences in factor endowments explain basically IT. Alternatively, newer trade theories based on economies of scale and product differentiation attribute similarities in factor endowments to trade expansions through IIT. Thus, the differences and similarities of factor endowments (apart from *SIMGDP*) are closely linked to the structure of trade. If the structure of trade is IT-based, differences in factor endowments[12] will most likely facilitate trade expansion vis-à-vis similarities in factor endowments. In this respect, the expected sign for β_6 will be positive (negative) if IT (IIT) dominates.

3.2 Empirical Strategy

Since there is no one single estimation technique that can be robust to account for various trade related data problems, the paper employs two techniques for estimating equations (1) and (2). They are the random effects (RE) and the Hausman and Taylor (henceforth HT, 1981) models. The following discussion justifies the use of both methods of estimation.

The RE estimator is chosen for the following reasons, despite the fact that the Fixed Effects (FE) estimator is much more common in gravity models than the RE estimator. The RE estimator has the advantage of not requiring the exclusion of variables that are time invariant. In this case, both the distance (*GD*) and landlocked effects (*DUMLand*) are invariant across time periods, and these variables are of considerable interest to this study. Furthermore, all of the variables exhibit more variation in the data across country-pair-product group (between variation) than over time (within variation). This is not surprising given the large number of cross-section entities (based on country-pair-product groups) used for the estimations, which are believed to have some influence on bilateral trade. As such, a FE may not work well for data with minimal within variation or for variables that change slowly over time.

Since FDI and new growth theories suggest that *GDPT* and *FDST* are likely to be endogenous[13], the HT technique is also employed (see also Egger, 2002). The HT estimator, uses the random-effects panel correcting for endogeneity. Brun *et al.* (2005) argued that this procedure is robust in large samples. In fact, distance and landlocked variables that are time invariant should be appropriately treated. The HT estimation allows for estimating coefficients on time invariant and time variant variables.

Based on the RE and HT estimations of the gravity model, Malaysia's export potentials with Chile, and *vice versa*, are derived. Export potentials, the ratio of predicted exports (P, arrived at by the estimated value of the dependent variable) to actual/ observed trade (A), are compared within the sample of LAC. If the value of P/A exceeds one (under-trading), then there is potential for expansion of trade with the respective country.

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[12] It should be borne in mind that differences in factor endowments are also crucial in determining vertical IIT, but, to a lesser degree (Chan-Hyun, 2005).

[13] Our endogeneity test results based on Durbin-Wu-Hausman test revealed that endogeneity exists.

3.3 Data Sources

3.3.1 Secondary Data

The dataset includes Malaysia's trade with the 20 countries of the LAC. The data span the period 1990-2012 (annual). The primary data on export flows based on the Harmonized System (HS) nomenclature is derived from the UN COMTRADE database. The data on *GDP*, labour force (*L*) and gross fixed capital formation (GFCF) are sourced from the World Bank Development Indicators and Global Development Finance (online World dataBANK). The data on *FDS* is obtained from the online database of the United Nations Conference on Trade and Development (UNCTAD), which is UNCTADstat. Data for *GD* on the basis of the average distance between the capitals for country-pairs and the information for landlocked (*DUMLand*) countries are extracted from the CEPII database. The definition and measurement of the key variables used in regression analysis are summarized in Appendix Table 1.

Potentials for expansions in exports from Malaysia to Chile and Chile to Malaysia are estimated separately within the LAC. The empirical estimations constitute a three-dimensional balanced panel of 6,900 observations (20 country-pairs x 15 sections x 23 years; the cross-section dimension relates to the country-pair-product group) for each case. The broad product groups[14] in the cross-sectional dimension refer to the 15 sections listed in Appendix Table 2.

3.3.2 Primary Data

A series of in-depth face-to-face interviews (approximately 40 minutes) are conducted with governmental organizations and key private-sector associations both in Malaysia and Chile; all interviewees hold key positions in their respective organizations and are directly involved in trade matters (see Appendix Table 4). The fieldwork in Santiago, Chile, was carried out for a duration of 2-weeks, 1-16 August 2014. Face-to-face interviews obtain detailed information on the types of burdensome NTMs and obstacles to trade at the product level. Interviews were based on a pre-defined questionnaire (see Appendix Table 5). The structure of the interview was in a discussion form, to solicit as much information as possible. In brief, it was a purposive survey.

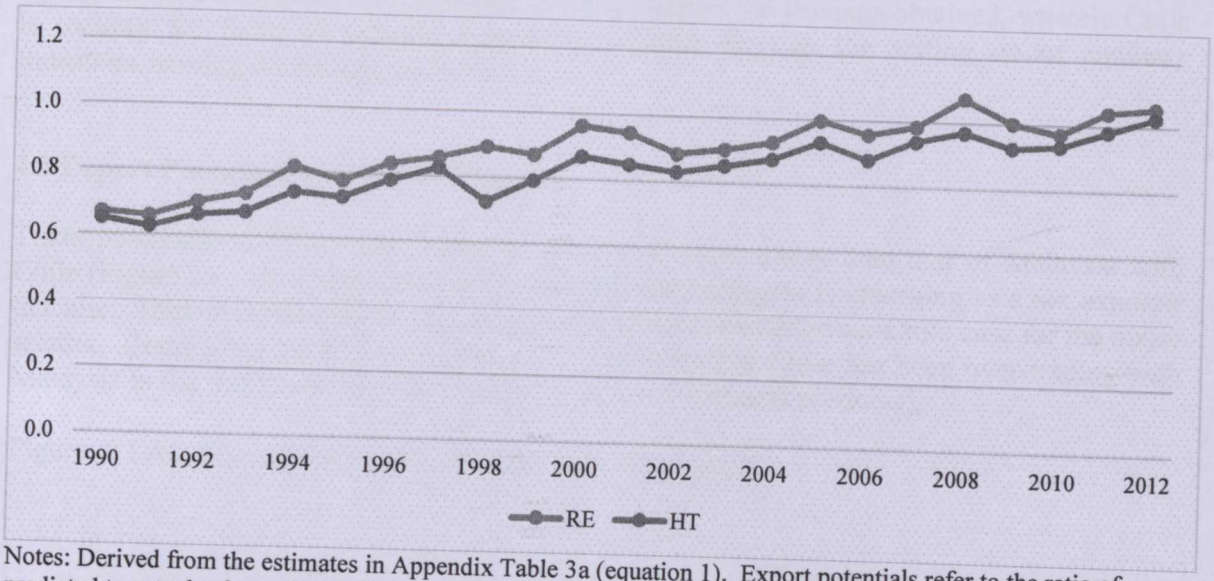
4. EMPIRICAL RESULTS: EXPORT POTENTIALS

4.1 Export Potentials of Malaysia to Chile

Appendix Table 3 presents the results of the RE and HT models on the determinants of export flows for Malaysia-LAC. Based on both estimations of the gravity model, Malaysia's export potentials with Chile are derived and presented in Figure 3. Export potentials for the entire time span (1990-2012) are calculated on the basis of the average values of P and A across the 15 sections. Trade potentials between Malaysia and Chile have gradually trended upwards. By sector, the export potentials derived from the estimations are averaged over specific intervals to identify changes over time (Table 5).

[14] This level of aggregation balances the issue of disaggregated versus aggregated analysis, and also reduces the problem of standard sample selection bias.

Figure 3: Malaysia: Export Potentials with Chile, 1990-2012



Notes: Derived from the estimates in Appendix Table 3a (equation 1). Export potentials refer to the ratio of predicted to actual values of trade flows.

Table 5: Malaysia: Export Potentials with Chile, by Sections, 1990-2012

Sector	RE				HT			
	1990-1995	1996-2001	2002-2007	2008-2012	1990-1995	1996-2001	2002-2007	2008-2012
1	0.9311	1.1059	1.3600	1.4165	0.8742	1.0376	1.2991	1.3581
2	0.7206	0.8457	0.8679	0.9129	0.6741	0.7710	0.8149	0.8599
3	0.6919	0.9555	0.9820	1.0212	0.6475	0.8708	0.9219	0.9617
4	0.4666	0.9097	0.9476	1.3394	0.4417	0.8242	0.8892	1.2659
5	0.8264	0.8665	0.8733	0.9213	0.7759	0.7913	0.8199	0.8676
6	0.5843	0.7426	0.7970	0.8565	0.5469	0.6773	0.7483	0.8065
7	1.0049	1.2854	1.5082	1.8199	0.9078	1.1696	1.4141	1.6407
8	0.8947	1.0142	0.9751	1.0012	0.8307	0.9263	0.9157	0.9431
9	0.8305	0.8133	0.8861	0.9515	0.7780	0.7419	0.8319	0.8962
10	0.8922	1.1509	1.2007	1.2022	0.8297	1.0495	1.1283	1.1306
11	0.8004	0.9173	1.1585	1.2127	0.7508	0.8361	1.0877	1.1411
12	0.8543	0.8732	0.8533	0.9806	0.7989	0.7972	0.8019	0.9236
13	0.5195	0.6654	0.7384	0.8275	0.4865	0.6068	0.6933	0.7795
14	0.7146	0.7947	0.9524	1.0164	0.6631	0.7243	0.8943	0.9568
15	0.7955	0.7910	0.8052	0.8569	0.7448	0.7217	0.7561	0.8069

Notes: Derived from the estimates in Appendix Table 3a (equation 1). Export potentials refer to the ratio of predicted to actual values of trade flows.

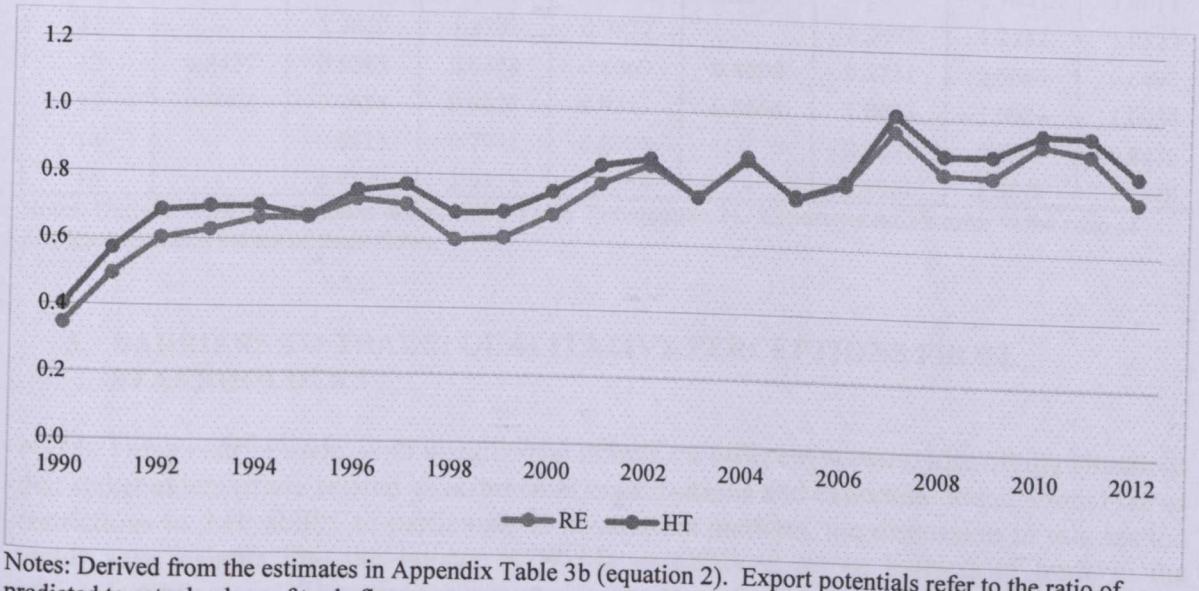
Surprisingly though, trade potential seems highest for Sector 7 (raw hides and skins, leather furskins and articles thereof; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut), followed by Sector 11 (namely manufactures of metals). Through interviews with the Malaysian trade promotion agency and the Chambers of Commerce, it is learnt that there is huge demand from the construction sector in Chile for building materials. This saw a surge in manufactures of metal, structures of iron, steel/ aluminium and wire products. The exports of this sector from Malaysia to Chile surged by

154 per cent in 2013 relative to 2012. The interviews with the Malaysian trade promotion agency and the Chambers of Commerce in Chile support the findings obtained, wherein Chile is looking for firms to provide supporting services through the setting up of ancillary industries, serving the mining sector in Chile.

4.2 Export Potentials of Chile to Malaysia

Trade potentials of Chile with Malaysia (Figure 4) seem lower than that of Malaysia with Chile (Figure 3). The latest data (2013) indicate that Malaysia is emerging as a net exporter to Chile. Table 6 further reports the export potentials in the Malaysia-Chile case for the major sectors. Comparing Table 6 and Table 1, it is obvious that Chile has been over-trading with Malaysia in the major export sectors, namely Sector 4 (mineral products).

Figure 4: LAC: Export Potentials with Malaysia, 1990-2012



Notes: Derived from the estimates in Appendix Table 3b (equation 2). Export potentials refer to the ratio of predicted to actual values of trade flows.

From Table 6, it appears that potentials of Chilean exports lie in Sectors 15, 10 and 9. Chile is in the process of building its astronomical structure, and this is expected to generate demand for services and related optical and scientific products. It is predicted that by 2018, 70 per cent of the world's astronomy infrastructure will be based in Chile. In this respect, Chile is also looking forward to attract astronomy related industries.

The empirical findings on trade potentials from both sides, Malaysia and Chile, should not be misconstrued to mean that there is no scope for expanding exports in the current major products traded. In fact, there could be specific sub-sections within those broad categories/ sections of products traded, wherein there are potentials for exports. This will be further delineated from the input obtained from the interviews in the next section.

Table 6: LAC: Export Potentials with Malaysia, by Sections, 1990-2012

Sections	RE				HT			
	1990-1995	1996-2001	2002-2007	2008-2012	1990-1995	1996-2001	2002-2007	2008-2012
1	0.6620	0.7346	0.7442	0.7362	0.6620	0.8020	0.7550	0.7866
2	0.4965	0.5733	0.6871	0.6960	0.4965	0.6269	0.6976	0.7436
3	0.4800	0.5809	0.6637	0.6958	0.5262	0.6351	0.6738	0.7435
4	0.5492	0.6452	0.6048	0.7058	0.5953	0.7050	0.6139	0.7545
5	0.5746	0.6087	0.7031	0.6988	0.6233	0.6646	0.7137	0.7458
6	1.2291	1.1385	1.1037	1.0401	1.2900	1.2123	1.1255	1.1096
7	0.7371	0.8969	0.9851	-	0.7945	0.9639	0.9801	-
8	0.6550	0.5767	0.6823	0.7041	0.7019	0.6303	0.6925	0.7527
9	0.5325	0.7707	1.0544	1.2443	0.5742	0.8000	1.0759	1.3177
10	0.7642	-	2.6518	1.2984	0.8389	-	2.7947	1.4011
11	-	1.2620	1.2708	0.9870	-	1.3497	1.2782	1.0323
12	0.4457	0.5265	0.6548	0.6069	0.4890	0.5751	0.6664	0.6486
13	0.8052	0.9654	0.9873	0.9383	0.8664	1.0633	1.0020	1.0030
14	-	0.8513	0.7941	0.8304	-	0.8837	0.8079	0.8875
15	-	0.8299	1.0513	1.4558	-	0.9011	1.0676	1.5386

Notes: Derived from the estimates in Appendix Table 3b (equation 2). Export potentials refer to the ratio of predicted to actual values of trade flows.

5. BARRIERS TO TRADE: QUALITATIVE PERCEPTIONS FROM STAKEHOLDERS

NTMs[15] may restrict trade, with unequicocal effects on different sectors. Identifying situations that stakeholders (trade-related governmental organizations and exporters' associations) see as restrictions to their ability to participate in destination markets, the discussion in this section yields new insights into the impact of NTMs as catalysts for or barriers to trade in the Malaysia-Chile case. The purpose however is not to make any judgments on the legitimacy of the NTMs.

Worth mentioning here also that the aim is not to evaluate the MCFTA as it has only been in effect for two-years. There are also no indications that the current increase in trade between Malaysia and Chile is because of the MCFTA. Though Malaysia and Chile are affected by 233 and 122 NTMs[16] worldwide, there are no NTMs in force/ initiated by either country that affects the other from the bilateral perspective. For example, as at 1 June 2014, of the 19 NTMs and specific trade concerns in force/ initiated by Malaysia with the World Trade Organization (WTO), none of it is with Chile. Likewise, Malaysia has not been affected by the 23 NTMs and specific trade concerns in force/ initiated by Chile. This plausibly explains why the MCFTA is considered by the Ministry of Foreign Affairs (DIRECON) in Chile as one of the easiest FTAs to conclude.

[15] Not all NTMs are in fact working as trade barriers.

[16] Information sourced from the WTO's Integrated Trade Intelligence Portal (i-TIP) at http://www.i-tip.wto.org/goods

5.1 Malaysian Perspective

In general, the negligible exports of Malaysia to Chile, imply a lack of focus on LAC despite the fact that Chile is indeed a natural gateway to LAC. Malaysian exporters have yet to take the Chilean market seriously though the latter can provide easy access to blocs such as Mercosur, Pacific Alliance and individual LAC economies through the extensive network of FTAs within the region. This is also reflected in the low levels of outward foreign direct investment (OFDI) from Malaysia to Chile.

The Malaysian furniture industry does not perceive any major barriers in exporting their products to Chile. The Malaysian Furniture Promotion Council (MFPC) perceive Chile to have less stringent customs procedure relative to that in the Europe and United States. Chile is also considered to be a good trading partner as information for exporters is easily made available and there is transparency in terms of product requirements/standards. The product standards are also non restrictive, thereby compliance is not an issue. However, the MFPC notes the low volume of exports of furniture from Malaysia to Chile. Among the reasons cited is that Malaysia produces medium-range furniture products and therefore is only able to serve a niche market, unlike that of China that exports a broad spectrum of furniture products. The low capacity in terms of volume and variety limits the interests of local Malaysian companies to expand their markets in Chile, especially when the former is weighed against logistic costs.

As in the case of the furniture industry, the rubber products industry have also carved a niche market in Chile. The rubber products industry[17] (latex gloves and nitrile gloves) have however pointed out that the NTM relevant to their exports relate mainly to the certificate of origin. The certificate of origin requires some weeks to be produced, hence, there is some time and costs incurred. In any case, this does not impact the overall costs of production.

The prospects for Malaysian firms to export food products or even set up food processing companies in Chile however remains dysmal, despite the conscious call towards higher value added food processing activities in Chile. Products from Malaysia that are fairing well in Chile are limited to condensed milk, evaporated milk and coconut milk. Further, there is only one Malaysian company engaged in food processing in Chile, which is the canning of salmon (based on the interview with MATRADE Santiago). This company is noted to be operating in a rather small scale, raking in only minimm profits. The main difficulty cited in penetrating the market for food products in Chile is that it is highly price competitive. Malaysian food companies are not able to compete on the basis of price with products of equivalent quality, and this is noted especially for snacks and confectionary. Further, most food supplier exporting companies in Malaysia seek exclusivity in the appointment of a sole distributor for their products given that they are small and medium sized enterprises (SMEs). Based on the interviews with MATRADE Santiago, it appears that this has proven to be counter-productive as the sole distributor[18], pushing mutiple lines of products in Chile, sees the Malaysian products as a minor part of their overall business, leading to weak sales and loss of control of the pricing of the product on the part of the Malaysian supplier.

The Malaysian investment promotion agency also highlighted the technical barriers to trade (TBT) issues related to the labeling requirements by Chile for various food products that are high in fat, sugar, calories or salt (see also, Johnson, 2014). The label warning statements (world's first obligatory warnings for such ingredients) are required under the new law in Chile on 'Nutritional Composition of Nutrients and Their Advertising', passed in July 2012.

[17] Information obtained from interviews with two Malaysian firms exporting rubber gloves to Chile.
[18] Unlike that for food prodcuts, there are many distributors for Malaysian-made rubber gloves in Chile.

Following which, there have been increasing requests for supermarkets in Chile to produce these labels to define unhealthy food, in addition to the accepted requirements[19] mentioned herein. Generally, foodstuff imports to Chile must bear labels in Spanish for all ingredients, including nutrition information, food additives, net contents, manufacturing and expiration dates of the products and contact details of manufacturer and importer. Further, the size and weight of the net contents must be converted into the metric system. While the strict[20] labeling policy may not pose a barrier to exports from Malaysia, since food products do not constitute a sizeable share of exports to Chile , it may indeed be a deterrent for SMEs in Malaysia to enter this section of the market. The underlying reason is that export of food products from Malaysia also have to meet the stringent standards required by world markets, of which Chile has gained international repute and applies similar standards on imported products, without discrimination. Following which, the Malaysian food exporters have yet to demonstrate serious interests in the Chilean market.

Though, the Chilean market constitutes a small share of total exports of the various industries, many Malaysian exporter associations still view Chile as an important market within the confines of the LAC region. However, they have yet to realize the opportunities that tapping into the Chilean market can yield in terms of expanding to the rest of the LAC. Factors such as distance and lack of specific business information/ contacts, has to some extent clouded their perception on the possibilities of harnessing complementarities through supply chains in Chile (where possible).

5.2 Chilean Perspective

Within Asia, there seems to be preference for Chilean companies to engage with China, Japan and South Korea. In general ASEAN economies do not seem to be the focus of Chile. This explains the minute figures observed in trade volume between Chile and Malaysia, albeit growing. Some concerns have been highlighted in heightening trade integration between both countries.

Despite advancements in digital connectivity, linking producers, suppliers, distributors and customers, face-to-face approach is considered imperative in engaging business between Asia and LAC. This issue was emphasized by the Chambers of Commerce, especially in the initial stages of identifying potential markets and buyers and advancing business deals between parties from both regions. In fact, this corroborates with the general findings of Hanouz *et al.* (2014) on the most problematic factor for exporting from Chile. The underlying reasons for this is not just the cultural and geographical distance between both regions, but mainly point to elements of trust and confidence on the part of the interested parties. Fears of factory scams in Asia have also contributed to the disfavour towards conducting start-up deals on an arms-length approach.

In this respect, the Chambers of Commerce recommend business matching/ networking missions as a great way to initiate the process of breaking into new markets. The mission trips, as per recommended, should include business matching opportunities based on the companies' area of interests, meeting and discussion with chambers of commerce and relevant government agencies and advise on conducting business deals in both countries. These trips can benefit participants in many ways as follow: learn the culture, customs, business and operating environment in the host country; assess potential demand; and finally

[19] Requirements that are considered reasonable since they assist consumers to obtain information about quality and compare options before buying.

[20] The standards, which require food products that exceed the levels to record in front of the packages high in sugar, salt or fat (red, green, blue) are considered much stricter than those proposed in the United States.

initiate vendor relationships. The Chambers of Commerce stresssed Malaysian firms should give due importance to initiating trade missions to explore the business opportunities in Chile, particularly so when the Chinese and Japanese companies have already established matured relationships with Chile and continue to aggressively promote their interests in Chile. In fact, it was noted through the interviews, that India is now coming on board to establish trade in textiles with Chile through a mission trip. The perception of Chilean counterparts is that most ASEAN countries, including Malaysia, are preoccupied with integrating within the region. In relation to the above, it is felt that the investment-trade linkage is ultimately important.

From the Chilean perspective, no NTB related problems were identified for their major exports to Malaysia, which is copper. Instead, the bottleneck cited by the relevant Ministries in trading with Malaysia relate specifically to the halal (produced in accordance with Islamic practices) certification (covering aspects of slaughtering, storage, display, preparation, hygiene and sanitation) for all meat, poultry and related products (except for pork). This TBT measure[21] has raised concerns namely because of its lengthy application and the delays in issuance of the halal logo. The halal certification for Chilean exporters is obtained from the Islamic Center of Chile, which is recognized by the Malaysian halal certification body, the Department of Islamic Development (JAKIM). From the Malaysian side, the delays relate mainly to lack of personnel to do lab testing, analysis and on-site inspection. The local certification, the Islamic Centre in Chile, is recognized by JAKIM and is certified every two-years by the latter. However, the Islamic Centre in Chile is only given the authority to certify seafood products and dried fruit products.

The certification of poultry, meat and dairy products are beyond the purview of the Islamic Centre in Chile as JAKIM and the Malaysian Department of Veterinary Science (DVS) has to date reservations on the slaughterhouses in Chile[22]. It is required by JAKIM that the slaughtermen in Chile should be Muslims and mechanical sacrifice is prohibited. From the Chilean perspective, it is not easy to incentivize slaughterhouses for poultry to move away from using mechanical slaughter procedures. Further, it is felt that there is some lack of consistency in the requirements and the interpretation of the Islamic practices pertaining to halal. To illustrate this, it is deemed that the company in Malaysia, Ayamas Food Corporation Sdn. Bhd., markets halal branded chicken amongst which is imported from countries that apply mechanical slaughter procedures. Further it is also identified that the halal process is interpreted differently by different certification bodies in terms of the number of Muslim workers required in a slaugtherhouse. In this context, it is felt that there should be more certification bodies in Chile to break the current monopoly and to ensure the conditions required for halal slaughter are administred transparently.

Despite these delays and setbacks, Chilean companies continue to seek the Malaysia[23] halal certification as it is recognized worldwide given its stringent criteria, which in itself is an attraction to global exporters that seek to tap other Muslim-dominated markets in Southeast Asia and beyond (the Middle East region). A testimony to this is the growing number of halal certified export-oriented companies in Chile, approximately 54 in 2012 (information obtained from Pro Chile). The market for meat and dairy products in Malaysia is an opportunity for Chilean producers to gain access, provided they meet the halal requirements. Malaysia, at present, predominantly imports these products from India, Australia and New Zealand. Chile

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[21] In general, Chile has reported technical measures as the main concern in exporting, namely those related to labelling, marking and packaging, for edible fruits and nuts, followed by beverages, spirits and vinegar and fish and crustaceans (ITC, 2010).

[22] Other reservations include the location of the slaughterhouses within a certain radius of other non-halal farms/ slaughterhouses to avoid contamination. However, this has been disputed as the pig farms are centred at different locations within Chile. They are also stored and transported separately for export purposes.

[23] Within Southeast Asia, the JAKIM is considered easier to deal with compared to the regulatory body for halal food in Indonesia, the Indonesian Council of Ulama (MUI).

also prides on the fact that their farms are disease-free, and thus not affected by outbreaks of the hand-foot-and-mouth disease (HFMD) or foot-and-mouth disease (FMD). Further, their meat products are competitively priced relative to other global exporters of similar products to Malaysia. In this regard, both the Malaysian and Chilean counterparts are continuously engaging with each other to ensure that the halal requirements are met for poultry, meat and dairy products.

6. CONCLUDING REMARKS AND RECOMMENDATIONS

The study scopes the bilateral trade potentials in the Malaysia-Chile partnership and appraises the non-tariff obstacles faced by the business sector through the perspectives of the related stakeholders in Malaysia and Chile. The empirical findings suggest overtrading in the major exporting sectors from both sides, since the export basket is also concentrated both ways in the Malaysia-Chile trade. Manufactures of base metal exports seem to have a good potential in the Chilean market. Through the interviews, fewer restrictions are reported by the various stakeholders, as the extent of trade engagement is still somewhat low,. The challenges identified within specific sectors from both sides relate to mainly to procedures set to secure compliance. They mostly indicate adherence to labeling requirements for food products.

Whilst the sector level analysis and the input obtained through consultative sessions with the various stakeholders has shown the types of products that have potential for success in the Chilean and Malaysian markets and the challenges that remain – it is equally important to understand the firm level (exporters') problems in gaining bilateral market access. Thus, to move the research forward, a survey is currently being conducted with exporters' in Malaysia and Chile, to quantify the impact of the NTMs on trade in terms of their restrictiveness. For this purpose, a questionnaire has been designed. The questionnaire contains three sections: the first section solicits information on the firm's general characteristics; the second section asks respondents to evaluate the stringency of the dimensions of NTMs (comprising both technical and non-technical measures) and border measures; and the third section requests respondents to evaluate the criticality of other NTMs (language and cultural barriers) that could also influence transaction costs.

Finally, the present study brings to the fore specific recommendations from the Malaysian side to engage with Chile, instead of *vice versa.* The recommendations are Malaysian-specific as the LAC is recognized globally as a new emerging region. As such, big actors in Asia, namely China, Japan and Korea (and more recently India and Singapore) are already aggressively moving into Chile through trade and investment. Thus, there is a critical need for the smaller players in Asia, like Malaysia, to also seize the 'first-mover advantages' in Chile, lest they lose out to the other Asian competitors. The following provides some specific suggestions:

- Though the basic foundation for trade cooperation has been laid out at the government level through the MCFTA, trade fairs and information centres to disseminate information regarding trade, commerce, and products at both ends, it is strongly recommended for the direct involvement of the business community in the cross-regional initiatives. For this:
    - Big/ established industry players with good financial standing from Malaysia (and ASEAN) are needed to initiate business networks with Chile (and the emerging region of LAC) and bring about deeper understanding in terms of cross-regional engagement. The ASEAN Business Club (ABC), comprising renowned captains of industry, for one, is actively pushing forward integration within the ASEAN region and they have been having many events in this

aspect. The ABC is therefore in a position to sell the idea to Malaysian (and ASEAN) companies that beyond just being multinationals (MNCs) in the regional (ASEAN) context through mergers and acquisitions, they should also step up to become global ASEAN MNCs. The ABC could therefore initiate trips to Chile to identify business potentials and contacts for the regional businessmen, especially among the SMEs. The Chambers of Commerce in Santiago have expressed their interest to connect directly with the business community in this regard.

  - Big industry players are also needed to initiate networks for sectors that require integrated development instead of snap-shot investments. This is the case of the mining and construction sectors in Chile. Both the mining and construction sectors in Chile are focused on developing ancillary/ supporting industries that can provide components (parts and materials) to their lead firms. This provides room for the electronic components and manufactures of base metal manufactures in Malaysia to expand their market shares by investing in Chile to service both sectors.

- The current low levels of trade cooperation between Malaysia and Chile signal the need to view the latter as an investment destination for specific sectors. It is strongly recommended that OFDI from Malaysia to Chile be promoted through the establishment of supply chains, generated in Chile for specific sectors. As mentioned above, there is scope for the electronics and base metal manufactures to form supply chains with Chilean firms in the mining and construction sectors respectively. Apart from the above industries, the wooden furniture industry has also scope to forge linkages with the wood industry in Chile to make ready-made furniture. In fact, some furniture companies in Malaysia continue to import timber from Europe and the United States as they are found to be less expensive than timber produced by local companies. This provides indications that internal supply chains can be generated with wood producing companies in Chile, but the feasibility of this needs to be studied further.

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Disclaimer

The views opinions expressed in this paper are solely those of the authors and do not necessarily reflect the position of the University of Malaya or the Embassy of Chile.

Appendix Table 1. Definition and Measurement of Variables

Variable	Definition	Measurement
X	Real exports	Total export, expressed in current USD, deflated by the CPI index, with 2005 as the base year.
GDPT	Total real GDP	$GDPT_{ij} = GDP_i + GDP_j$ where *GDP*, expressed in current USD, is deflated by the *GDP* deflator with 2005 as the base year
SIMGDP	Similarity in the levels of GDP or relative size of trade partners	$SIMGDP_{ij} = 1 - \frac{GDP_i^2}{(GDP_i + GDP_j)^2} - \frac{GDP_j^2}{(GDP_i + GDP_j)^2}$ where $0 \leq SIMGDP_{ij} \leq 0.5$ If $SIMGDP_{ij} = 0$ (absolute divergence in size) $SIMGDP_{ij} = 0.5$ (equal country size)
FDST	Total real inward foreign direct investment (FDI) stock	$FDST_{ij} = FDS_i + FDS_j$ For associate and subsidiary enterprises, it is the value of the share of their capital and reserves (including retained profits) attributable to the parent enterprise (this is equal to total assets minus total liabilities), plus the net indebtedness of the associate or subsidiary to the parent firm. For branches, it is the value of fixed assets and the value of current assets and investments, excluding the amounts due from the parent, less the liabilities to third parties. The *FDS*, expressed in current USD, is deflated by the CPI index with 2005 as the base year.
SIMFDS	Similarity in the inward FDI stock of trade partners	$\boldsymbol{SIMFDS_{ij} = 1 - \frac{FDS_i^2}{(FDS_i + FDS_j)^2} - \frac{FDS_j^2}{(FDS_i + FDS_j)^2}}$
RLFAC	Similarity in capital-labour ratios (or land-labour ratios) or the distance between countries in terms of relative factor endowments	$RLFAC_{ij} = \lvert \ln(K_{jt}/L_{jt}) - \ln(K_{it}/L_{it}) \rvert$ or $RLFAC_{ij} = \lvert \ln(Land_{jt}/L_{jt}) - \ln(Land_{it}/L_{it}) \rvert$ where K = capital stock; L = labour force and Land = land area If $RLFAC_{ij} = 0$ (same proportion of factor endowments) The estimated capital stock is $K_t = GFCF_t + (1 - \delta)K_{t-1}$ Total labour force comprises people ages 15 and older who meet the International Labour Organization definition of the economically active population. The land area is in square kilometres. The GFCF consists of outlays on additions to the fixed assets (land improvements, plant, machinery and equipment purchases; construction of roads, railways and the like) of the economy plus the net changes in the level of inventories. The GFCF, expressed in current USD, is deflated by the CPI index with 2000 as the base year. Using the data on GFCF, K is estimated using the standard perpetual inventory calculation method (Miller & Upadhyay, 2000): $K_0 = GFCF_0 / [\lambda gd + (1 - \lambda)gw + \delta]$ where the initial or base year is 1970. gd = average growth rate of the GDP series for the related country for the period of review gw = estimated average world growth rate for the period of review $\lambda = 0.25$, measure of mean reversion in growth rates $\delta = 0.05$, assumed rate of depreciation
GD	Geographical distance	The average distance (in kilometres) between the capitals of i and j.

Appendix Table 2. Description of Sections

Section	Description
1	Live animals; animal products
2	Vegetable products; animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes
3	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes
4	Mineral products
5	Products of the chemical or allied industries
6	Plastics and articles thereof; rubber and articles thereof
7	Raw hides and skins, leather fur skins and articles thereof; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silkworm gut)
8	Wood and articles of wood; wood charcoal; cork and articles of cork; manufacturers of straw of esparto or other plaiting materials; basket ware and wickerwork; pulp of wood or other fibrous cellulosic material; waste and scrap of paper or paperboard; paper and paperboard and articles thereof
9	Textile and textile articles
10	Footwear, headgear, umbrellas, sun umbrellas, walking sticks, seat sticks, whips, riding-crops and parts thereof; prepared feathers and articles made therewith; artificial flowers; articles of human hair
11	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware; natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with previous metal, and articles thereof, imitation jewellery, coin
12	Base metals and articles of base metal
13	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound reproducers, and parts and accessories of such articles thereof
14	Vehicles, aircraft, vessels and associated transport equipment
15	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof; arms and ammunition; parts and accessories thereof; miscellaneous manufactured articles; works of art, collectors' pieces and antiques

Note: Adapted from the United States International Trade Commisssion (USITC).

Appendix Table 3a. Determinants of Trade Flows for Malaysia-LAC

Variables	RE	HT
ln*GDPT*	3.741**	3.768***
	(1.730)	(0.556)
SIMGDP	0.103*	0.066***
	(0.055)	(0.017)
ln*GD*	-8.086*	-1.292
	(4.656)	(4.895)
ln*FDST*	-0.437	-0.065
	(0.555)	(0.385)
SIMFDS	0.014	0.015*
	(0.015)	(0.009)
RLFAC	0.099	0.078
	(0.427)	(0.191)
DUMLandlocked	-0.662	-0.628
	(1.836)	(0.937)
Constant	-	-76.452
		(56.070)
Year effects	Yes	Yes
Importer effects	Yes	Yes
No. of observations	6900	6900
No. of groups	300	300
R^2 overall	0.292	
Wald test	2978.24	2265.17
Breusch-Pagan LM test	26297.34	

Notes: The estimations are based on equation (1). The dependent variable is ln*X*. RE – random effects and HT – Hausman-Taylor; Standard errors are in parentheses. ***, **, and * show 1%, 5%, and 10% significance, respectively.

Appendix Table 3b. Determinants of Trade Flows for LAC-Malaysia

Variables	RE	HT
ln*GDPT*	2.281	1.789***
	(2.005)	(0.518)
SIMGDP	0.153**	0.049***
	(0.061)	(0.016)
ln*GD*	-11.238**	-14.264***
	(5.549)	(4.342)
ln*FDST*	1.957***	2.850***
	(0.682)	(0.372)
SIMFDS	0.069***	0.072***
	(0.016)	(0.009)
RLFAC	-0.098	0.070
	(0.341)	(0.184)
DUMLandlocked	0.731	0.463
	(1.538)	(0.827)
Constant	-	21.261
		(50.112)
Year effects	Yes	Yes
Exporter effects	Yes	Yes
No. of observations	6900	6900
No. of groups	300	300
R^2 overall	0.514	
Wald test	2461.06	1592.16
Breusch-Pagan LM test	12198.57	

Notes: The estimations are based on equation (2). The dependent variable is ln*X*. RE – random effects and HT – Hausman-Taylor. Standard errors are in parentheses. ***, **, and * show 1%, 5%, and 10% significance, respectively.

Appendix Table 4: List of Stakeholders Interviewed

No.	Malaysian Perspective
1	Trade Commissioner, Malaysia External Trade Development Corporation (MATRADE), Santiago.
2	President, Malaysian Furniture Promotion Council (MFPC)
No.	**Chilean Perspective - Santiago, Chile**
1	Head, Asia & Oceania Department, Division of Bilateral Economic Affairs, Ministry of Foreign Affairs (DIRECON).
2	Advisor, Studies Department, Ministry of Foreign Affairs (DIRECON).
3	Head, Asia Pacific and New Markets Department (International Division), Pro Chile
4	Officer, Sustainable Trade Department, Pro Chile.
5	President, Santiago Chamber of Commerce (CCS).
6	Chairman, Asia Pacific Chamber of Commerce.
7	Director, Asia Pacific Chamber of Commerce.
8	Director, International Commerce, Chile Manufacturers' Association (SOFOFA).
9	Executive Director, Chile Pacific Foundation.
10	Officer, Islamic Centre of Chile
11	Economic Affairs Officer, Division of International Trade and Integration, Economic Commission for Latin America and the Caribbean (ECLAC).

Appendix Table 5: List of Interview Questions (Guide for Discussion)

A. *Opinion on the MCFTA:*

(1) Has the MCFTA benefited Malaysian (Chilean) traders in terms of better market access in Chile (Malaysia)?

(2) Were there significant increases in trade with Chile (Malaysia) following the MCFTA? In your opinion, have the gains in trade been balanced? If no, why?

(3) What is the extent of utilization of preferential tariffs?

(4) How informed is the business community on the rules of origin (ROO)?

(5) Have there been any complaints from exporters regarding the documentation/ procedures related to the ROO?

(6) Has there been progress in other areas of cooperation, beyond trade and investment, as outlined in the MCFTA? How significant is the progress made in trade relative to these other areas of cooperation? *(e.g.: R&D, science and technology, mining and related industries, tourism, education and culture).*

B. *General profile of exporters in Malaysia (Chile):*

(7) Are your major exporters in Malaysia (Chile) mainly fully-owned local companies or joint venture establishments?

(8) Can these exporters be considered large companies or small and medium enterprises (SMEs)? Does the average establishment size vary significantly across major exporting sectors/ industries?

C. *Perception on barriers to trade in Chile (Malaysia):*

(9) Are there any critical/ specific barriers faced by Malaysian (Chilean) exporters in engaging business with Chile (Malaysia)?
(e.g.: technical regulations; product standards; local content requirements; restrictive customs procedures)

(10) Which exported products are most affected by non-tariff measures (NTMs) imposed by Malaysia? Any recent incidences of NTMs in Chile (Malaysia) that have affected Malaysian (Chilean) exporters?

(11) Are Malaysia's halal requirements considered strict relative to other countries?

(12) How transparent is the halal certification process in Malaysia?

(13) Do you consider the requirements within the halal food industry in Malaysia to be 'market distorting' or regulations that merely reflect culture?

(14) Alternatively, have the NTMs in Chile (Malaysia) affected Malaysian (Chilean) trade positively? In short, has there been sufficient transparency in the imposition of NTMs in Chile (Malaysia)?
(e.g.: by providing more information to consumers on product characteristics and safety; giving more certainty to producers on the necessary conditions to enter the Malaysian market).

(15) What is the major compliance impact of the NTMs in Chile (Malaysia) on Malaysian (Chilean) exporters?
(e.g.: increase in price premium; increase in production cost).

(16) What is the compliance outcome of NTMs in Chile (Malaysia) for Malaysian (Chilean) exporters? Is the Chilean (Malaysian) market important enough for Malaysian (Chilean) exporters or have the Malaysian (Chilean) exporters chosen to divert trade?

(17) Would you consider Chile (Malaysia) an easy market to penetrate relative to the other major export destinations of Malaysia (Chile)? Relative to other Latin American (Southeast Asian) markets?

D. General opinion on way forward:

(18) Are there any specific trade facilitation programmes to intensify trade between Malaysia and Chile? How about plans to diversify Malaysian (Chilean) exports to Chile (Malaysia)?

(19) Does the Malaysian (Chilean) government provide support for SMEs aiming to sell overseas?

(20) To what extent has bilateral investment facilitated trade between Malaysia and Chile?

(21) What are the plus-factors of Malaysia (Chile) to be a gateway for Chilean (Malaysian) traders and investors to expand to other Southeast Asian (Latin American) markets?

References

ADB (2012). *Shaping the Future of the Asia and the Pacific-Latin America and the Caribbean Relationship*, Asian Development Bank: Manila.

APEC (2014). *Perceptions on the Use of Non-Tariff Measures within the APEC Region*, Asia Pacific Economic Cooperation Policy Support Unit: Singapore.

Baltagi, B.H., Egger, P. and Pfaffermayr, M. (2003). A generalized design for bilateral trade flow models, *Economics Letters* 80(3): 391-397.

Baxter, M. and Kouparitsas, M.A. (2006). What determines bilateral trade flows? NBER Working Paper No.12188, National Bureau of Economic Research (NBER): Cambridge Massachusetts.

Bergstrand, J.H. (1985). The gravity equation in international trade: some microeconomic foundations and empirical evidence, *Review of Economics and Statistics* 67(3): 474-481.

Berisha-Krasniqi, V., Bouet, A., Estrades. C. and Laborde, D. (2011). Trade and investment in Latin America and Asia: lessons from the past and potential perspectives from further integration, IFPRI Discussion Paper 01060, International Food Policy Research Institute.

Chengang, W., Yimgqi, W. and Xiaming, L. (2010). Determinants of bilateral trade flows in OECD countries: evidence from gravity panel data models,' *World Economy* 33(7): .894-915.

Cieslik, A. (2009). Bilateral trade volumes, the gravity equation and factor proportions, *Journal of International Trade and Economic Development* 18(1): 37-59.

Debaere, P. (2003). Relative factor abundance and trade, *Journal of Political Economy* 11(3): 589-610.

Devadason, E.S. and Subramaniam, T. (2014). Trade interactions between China-Latin America vis-à-vis ASEAN-Latin America: The relevance of the center-periphery relations? in *Trade Relations between Latin America and Asia Pacific: Challenges and Opportunities*, Observatorio America Latina-Asia Pacific: Montevideo, pp.135-162.

ECLAC (2008). *Opportunities for Trade and Investment between Latin America and the Asia Pacific*, Santiago: Economic Commission for Latin America and the Caribbean (ECLAC).

ECLAC (2011a). The Rio group and ASEAN: Toward a strategic South-South relationship, Santiago: Economic Commission for Latin America and the Caribbean (ECLAC).

ECLAC (2011b). *Forum for East Asia-Latin America Cooperation (FEALAC): New Bi-Regional Trade and Investment Relations in a Changing World Economic Environment*, Santiago: Economic Commission for Latin America and the Caribbean (ECLAC).

Egger, P. (2000). A note on the proper econometric specification of the gravity equation, *Economics Letters* 66(1): 25-31.

Egger, P. and Pfaffermayr, M. (2003). The proper panel econometric specification of the gravity equation: a three-way model with bilateral interaction effects, *Empirical Economics* 28:571–580.

Hanouz, M.D., Geiger, T. and Doherty, S. (eds.) (2014). *The Global Enabling Trade Report 2014*, World Economic Forum (WEF): Geneva.

Johnson, R. (2014). Sanitary and phytosanitary (SPS) and related non-tariff barriers to agricultural trade, Congressional Research Service (CRS) Report No. R.43450, United States.

ITC (2010). *Market Access, Transparency and Fairness in Global Trade – Export Impact for Good 2010*, International Trade Centre (ITC): Geneva.

Kee, H.L., Nicita, A. and Olarreaga, M. (2009). Estimating trade restrictiveness indices, *Economic Journal* 119: 172--199.

King, G., Mattos, J.C., Mulder, N. and Rosales, O. (eds.) (2012). *The Changing Nature of Asian-Latin American Relations,* Santiago: Economic Commission for Latin America and the Caribbean (ECLAC).

Kuwayama, M., Mattos, J.C. and Contador, J. (2000). Trade and investment promotion between Asia-Pacific and Latin America: Present position and future prospects, Santiago: Economic Commission for Latin America and the Caribbean (ECLAC).

Melo, O., Engler, A., Nahuehual, L., Cofre, G. and Barrena, J. (2013). Do sanitary, phytosanitary, and quality related standards affect international trade? Evidence from Chilean fruit exports, *World Development* 20: 350-359.

Mikic, M. and Jakobson, E. (2010). Examining the potential for Cross-South Pacific trade: ASEAN and Latin America, Staff Working Paper 02/10, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP): Bangkok.

Poyhonen, P. (1963). A tentative model for the volume of trade between countries, *Weltwirtschafliches Archiv* 90(1): 93-99.

Saez, S. and Solar, J.S. (2006). Analysis of non-tariff barriers to Chilean exports. Available from:
http://siteresources.worldbank.org/INTEAPREGTOPINTECOTRA/Resources/579386-1145902243289/NTBCHILERev1June2006.pdf

Tinbergen, J. (1962). *Shaping the World Economy: Suggestions for an International Economic Policy*, Twentieth Century Fund: New York.

Wignaraja, G., Ramizo, D. and Burmeister, L. (2012). Asia-Latin America free trade agreements: an instrument for inter-regional liberalization and integration? ADBI Working Paper No. 382, Asian Development Bank Institute: Tokyo.